

<b>Procedure: <i>Monitor and Control</i></b>	
<b>Issue Date: May 5, 2000</b>	<b>Procedure ID: <i>P-PM-150</i></b>
<b>Supersedes: October 9, 1998</b>	<b>Rev/Change 2.0</b>

**1. Purpose:** To review the project's status against the plans and take corrective actions if necessary.

**2. Applicability:** This procedure is applicable to all government and contractor personnel assigned to ATISD.

**3. Responsibility:** Project Manager

**4. Support:** Quality Assurance, Configuration Management, Engineers

**5. Invoked By:** Standard Process

**6. Inputs:**

Project Plan(s) Defined in Glossary (Appendix G)

**7. Outputs:**

Status Report S-PM-275  
Updated Project Estimates S-PM-190  
Meeting Minutes Defined in Glossary (Appendix G)  
Action Item List Defined in Glossary (Appendix G)

**8. Procedures Invoked:**

Estimating Required Quantities P-PE-160  
Estimating Critical Computer Resources P-PE-200

**9. External Procedures Referenced:** N/A

**10. Procedure Steps:**

- a) The Contractor Project Manager reviews the information documented on the Critical Success Factors worksheet (S-PM-090).
- b) The Contractor Project Manager documents all Government expectations and agreements (e.g., teleconference, email, videoconference, fax, phone, etc.).
- c) The Contractor Project Manager collects information about the project status and progress. This information can easily be collected at the project's status meetings and documented as part of the meeting minutes. Some of this data may come at any time (Modification Request, Trouble Reports, Directives, etc.) from a variety of sources (Government, The ATISD Director, End Users, etc.). The Contractor Project Manager will also be receiving project status information from the SPG, based on data the Contractor Project Manager has submitted to the SPG. The data the Contractor Project Manager is to collect may include:

- ?? Technical Progress
- ?? Financial Progress (MIS or Expended Hours Forms)
- ?? Quality Assurance Discrepancies
- ?? Government Comments and Direction (Modification Request)
- ?? Risk Status
- ?? Configuration Management Status Accounting
- ?? Open Issues (with the Government)
- ?? Action Items (with staff)
- ?? ATISD Director's Directives

- d) The Contractor Project Manager places the data in the Project Records.
  - e) The Contractor Project Manager analyzes the collected data.
  - f) The Contractor Project Manager updates estimated quantities as he/she gets new information.
  - g) The Contractor Project Manager replaced estimated values with actual values as they become available.
- ?? The Contractor Project Manager compares the actual situation with the desired situation [project plan(s)]. (See Note d)
- h) The Contractor Project Manager looks at the biweekly moving average number of defects or the current average defect count of the Peer Review and Testing performance and compares them against the control limits and takes appropriate action (see Note 1).
  - i) The Contractor Project Manager reviews the project's progress against the approved project plan(s). If the project is progressing in accordance with the plan(s), then no action is required. If changes requested by the Government cause modifications to the plan(s) then the impact must be considered at this point. If a problem is found in the project's progress, or the ATISD Director or the Government redirects the project, there are three actions that can be taken:
    - (1) Nominal Changes - routinely corrects the problem without any coordination external to the Project Team.
    - (2) Minor Changes - requires an update to the project plan(s) and/or estimates (P-PE-160) which must be coordinated with the Project Team and The ATISD Director.
    - (3) Major Changes - changes to scope, changes that affect the specified requirements of the contract, redefining technical approach, revising offer, revising detailed plan(s), updating estimates (P-PE-160), etc. For option (3), the Contractor Project Manager must revisit the steps of the "Project/Planning" phase process beginning with "Planning Meeting (Proposal Kickoff)". If this change requires a contract modification then the Contractor Project Manager does the following:
      - ?? Identifying changes to the requirements baseline
      - ?? Coordinating with team to determine impact
      - ?? Coordinating response with Contracts
      - ?? Initiate contract modifications with Contracts.

- j) If actions are required, the Contractor Project Manager assigns the actions to the Project Team members and documents the assignments on an Action Item List and assures that they are tracked to closure.
- k) If changes to the estimates are necessary (see Note 2), the Contractor Project Manager makes the changes using procedure P-PE-160 “Estimating Required Quantities” or P-PE-200 “Estimating Critical Computer Resources”, submits them to The ATISD Director for review, documents them on the Updated Project Estimates form (S-PM-190), places the original in the Project Records.
- l) The Contractor Project Manager reports status (S-PM-275) to The ATISD Director on a periodic basis as defined in the project plan(s) or when dictated by events.
- m) The Contractor Project Manager completes the Expended Hours Summary and Updated Project Estimates form and places them in the Project Records, as appropriate.
- n) The Contractor Project Manager observes and collects Lessons Learned, including information derived from personnel departing from program. (See Note 3).

## 11. Notes:

- a) If the defect rate is too high the problem may be that defects injected at earlier stages are not being detected or the developer needs further training and mentoring. If the defect rate is above or below control limits, check to ensure that the preparation time and review time per defect found, are as large as was budgeted. The crux of this investigation is to verify that the staff is spending enough time reviewing the material.
- b) Updated estimates are prepared as necessary during the monitor and control process. In particular, these include adds, changes and deletes to requirements, the number of staff, etc. The Project Manager must indicate the number of people assigned to and departing from the project. (The change category has no meaning for personnel other than the replacement of trained, experienced team members with personnel who must move up the learning curve.) Every individual, whether full or part time, counts as one person for this purpose. This information is used to track project staff turnover since high rates of turnover are usually a source of risk.
- c) For large projects we recommend a lessons learned analysis be performed at the end of each build or release or even at the end of major phases (SDR, PDR, CDR, etc.). This analysis provides information that can be used to improve the performance of the project for the work that follows. The usual closeout process should be followed at the end of the project.
- d) The comparison of actual vs. plan may address the following areas:

### ?? Technical

- Estimates not being updated as planned
- Completion of interim products
- Performance measures (TPM)
- Estimated size growth (units, LOC, hours, etc.) or fluctuation over time
- Requirements volatility
- Excessive defects (peer reviews)
- Process audit discrepancies
- Excessive rework

?? Deliverables

?? External Commitments

?? Critical Computer Resources

?? Project Critical Resources

?? Effort

?? Size

?? Cost

- Estimate to complete versus available budget
- Burn rate
- Productivity (bid versus actual)
- Actual labor rates exceed the bid labor rates

?? Schedule

- Missing a major milestone
- Repeated slips in inchstones
- Critical dependencies

?? Other

- Turnover
- Low morale
- Excessive overtime
- Thrashing in Configuration Management Library